

# LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE



*For the Technical Direction of the LTPP  
Program*



Program Area:	General Operations	Directive Number: GO-22
Date:	July 30, 1999	Supersedes: SHRP-LTPP-OM-001
Subject:	Guidelines for Maintenance and Rehabilitation of LTPP Test Sections	

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## INTRODUCTION

This directive was originally issued in July, 1988 as Strategic Highway Research Program (SHRP) Long Term Pavement Performance (LTPP) Operational Memorandum (OM) 001. This version supersedes OM-001 but does not substantially revise the original guidelines (i.e. there is no change in policy). The primary purpose for this update is to be more consistent with contemporary LTPP terminology and related Directives.

Maintenance performed on LTPP test sites will influence the results of the pavement performance studies. However, some maintenance must be performed on the test sites to keep the pavements in a safe and serviceable condition. Also, some of the test sites have been in service for many years and have already been subjected to some form of maintenance. Changing the types and level of maintenance or eliminating maintenance on a section during the field monitoring program may bias the results.

## SCOPE AND OBJECTIVE

The maintenance guidelines stated here were developed to allow the application of the same routine maintenance that a study site would have normally received if it had not been selected as a monitoring site, while limiting the use of treatments that influence the structural response of the pavement. The limitations on maintenance activities are intended to eliminate those activities that would reduce or destroy the amount of information that can be obtained from a test site. Maintenance of non-pavement related items such as guard rails, lighting, and signs is not affected by these guidelines.

The objective of these guidelines is to define the extent of preventive or routine maintenance which is representative of participating agencies' practices that should be performed on the monitoring sections. It is desired that the monitoring sections receive maintenance attention in response to an observed pavement need, without consideration to their designation as LTPP test sites.

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A maintenance control zone, as shown in Figure 1, was established around each LTPP project to coordinate maintenance activities in this area and to reduce the influence of other maintenance activities on the performance of the test section. Therefore, these guidelines pertain only to the maintenance activities within this maintenance control zone.

For General Pavement Studies (GPS) test sections the maintenance control zone is located adjacent to the ends of the test section as shown in Figure 1. For Specific Pavement Studies (SPS) projects, which generally consist of multiple test sections, the maintenance control zone is established prior to the first test section and is terminated after the last project test section. For SPS sites with a test section(s) located more than 1.6-km (1-mile) apart the maintenance control zone should be established for each group of test sections.

### **COORDINATION WITH LTPP REGIONAL COORDINATION OFFICE (RCO)**

The LTPP Regional Coordination Office (RCO) must be advised in advance of any maintenance operation that will cover the pavement surface and “hide” distresses in the control zone or change the structural characteristics of the pavement. Addresses and phone numbers of the LTPP Regional Coordination Offices are listed in Appendix A.

### **MAINTENANCE RECORDS**

Details of all maintenance activities performed on LTPP test sections should be recorded on the data forms established by LTPP. These forms can be obtained from the LTPP RCO and should be completed and returned to the RCO as soon as practical following a maintenance treatment.

### **PROCEDURES AND MATERIAL**

All maintenance treatments should be performed using the highway agency’s standard procedures and materials.

### **SAFETY-RELATED MAINTENANCE**

Safety-related maintenance may be performed according to the participating agency’s standards at any time. Safety-related maintenance used in this context refers to spot patching of potholes, punchouts, blowups, or other surface defects as well as restoration of friction resistance. For slowly-deteriorating safety conditions, it would be desirable to notify the LTPP RCO in advance of any corrective action so that an observation of the pavement condition prior to application of the treatment can be made.

### **ROUTINE OR PREVENTIVE MAINTENANCE**

Some types of “routine” or “preventive” maintenance activities that may be performed on the LTPP monitoring sections include crack sealing, joint cleaning/sealing, and isolated spot pavement repairs. These activities may be performed without prior notification of the LTPP RCO.

Other types of maintenance activities that may be performed on the LTPP monitoring sections include application of the following:

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- milling less than 25-mm (1-inch) deep
- surface grinding
- sand seal
- chip seal
- aggregate seal
- slurry seal
- fog seal

Since the application of these types of treatments hide the pavement surface or alter the surface profile, their placement should be coordinated with the LTPP RCO prior to conduct of the work. Some lead time is needed in these circumstances to allow LTPP RCO staff to visit the site and document the surface condition prior to application of the treatments.

**RESTORATION OR REHABILITATION TREATMENTS**

Restoration and rehabilitation treatments are permitted on LTPP test sections as long as the provisions of LTPP General Operating (GO) Directive Number 9, Policy for Monitoring Continuation on Rehabilitation Test Sections, are followed. Directive GO-9 presents the policy for monitoring continuation on modified LTPP test sections, including highway agency responsibilities, LTPP program responsibilities, definition of acceptable and unacceptable rehabilitation treatments, and preferred rehabilitation specifications. Please refer to this document for details. Other directives related to this issue include the following:

- % GO-8, Reasons for Test Section Rehabilitation
- % GO-13, Policy for Classification of Rehabilitated Test Sections
- % GO-14, Rehabilitation Information RI-2, Monitoring Continuation Request

When restoration or rehabilitation treatments are applied, transitions from these treatments to the monitoring section should be of sufficient length to ensure that performance of the test section is not influenced. If any of these types of treatments are planned for the pavement surrounding a test section or project, or for an adjoining lane or shoulder, the RCO must be notified as early as possible to enable adequate monitoring of pavement condition prior to treatment application. For test sections that will remain in the study after a rehabilitation treatment, it is important that appropriate LTPP rehabilitation forms be completed to document the treatment application. These forms can be obtained from the LTPP RCO and should be completed and returned to the RCO as soon as practical following the rehabilitation treatment.

**QUESTIONS**

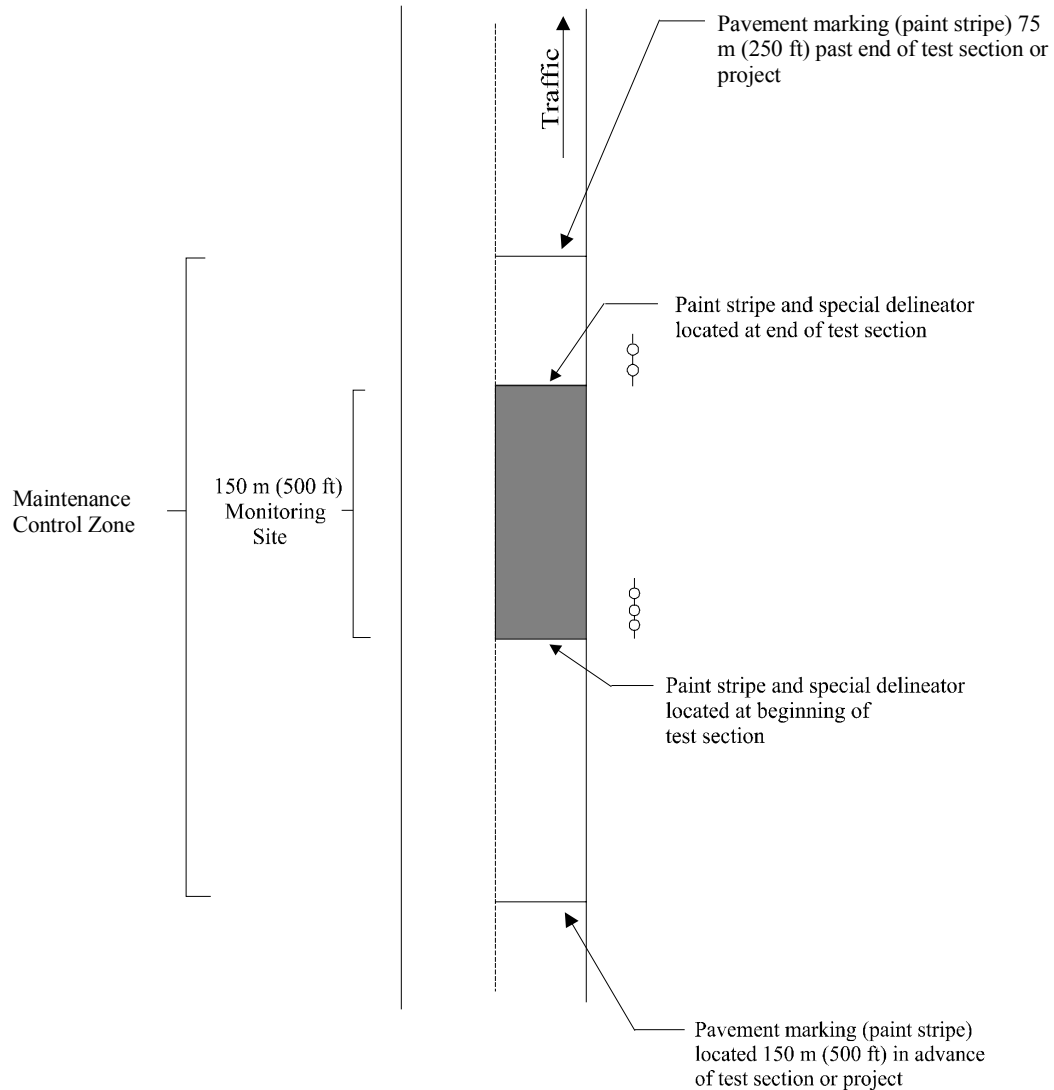
Questions or concerns related to this directive should be addressed in writing to the FHWA LTPP team and to the appropriate RCO contact.

Approved by

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Monte Symons  
LTPP Program Manager

Prepared by: Technical Support Services Contractor



Note: detailed specifications for pavement marking are contained in another General Operations directive entitled, "Guidelines for Signing and Marking LTPP Test Sections."

Figure 1. Illustration of monitoring site maintenance control zone.

Appendix A  
FHWA LTPP Program Contacts

**LTPP Headquarters**

U.S. Department of Transportation  
Federal Highway Administration  
Turner-Fairbank Highway Research Center  
Office of Infrastructure R&D  
6300 Georgetown Pike, HRDI-13  
McLean, VA 22101-2296  
Tel: (202) 493-3143  
Fax: (202) 493-3161  
[www.tfhrc.gov](http://www.tfhrc.gov)

**LTPP Regional Coordination Offices**

*North Atlantic Region*

Area: North Carolina, Virginia, West Virginia, Maryland, Delaware, District of Columbia, New Jersey, Pennsylvania, New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, Maine, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland.

Contractor: Stantec Consulting, Inc.  
415 Lawrence Bell Drive, Suite 3  
Amherst, NY 14221  
Phone: (716) 632-0804  
Fax: (716) 632-4808

*North Central Region*

Area: Kansas, Missouri, Kentucky, Ohio, Indiana, Illinois, Iowa, Nebraska, South Dakota, North Dakota, Minnesota, Wisconsin, Michigan, Manitoba, and Saskatchewan.

Contractor: ERES Consultants, Inc.  
505 West University Avenue  
Champaign, IL 61820-3918  
Phone: (217) 356-4500  
Fax: (217) 356-3088

*Southern Region*

Area: New Mexico, Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Tennessee, Alabama, Georgia, South Carolina, Florida, and Puerto Rico.

Contractor: FUGRO-BRE  
8240 MoPac Expressway, Suite 220  
Austin, TX 78759

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Phone: (512) 346-0870

Fax: (512) 346-8750

*Western Region*

Area: Arizona, California, Hawaii, Nevada, Utah, Colorado, Wyoming, Idaho, Oregon, Washington, Montana, Alaska, British Columbia, and Alberta.

Contractor: Nichols Consulting Engineers, Chtd.

1885 S. Arlington Avenue, Suite 111

Reno, NV 89509

Phone: (775) 329-4955

Fax: (775) 329-5098